AMERICAN LIFE INSURANCE METHODS.

Life insurance is in all cases essentially a simple operation, embracing at most four or five easily comprehended elements. The moneys paid in by the insured form a fund which may or may not be improved by interest; from this accumulation from time to time are deducted the death-losses and other maturities paid and the expenses of the company. The remainder, if any, is either carried forward, sometimes as policy-credits, sometimes as a general fund, or else is divided among the insured. It will be observed that in any case the operation is radically mutual, the same persons being in effect if not in name both insurers and insured.

Of course, these four simple elements—to which might be added a fifth, namely; the increase of individual shares in the fund by the diminution of the number interested—admit of a variety of permutations and modifications. The diversities created by modes of treating these elements have led many men to think that life insurance is complex and indeed undecipherable to any but the most expert. This idea has been fostered by persons interested in preventing too clear an understanding of life insurance becoming common. On the one side it has suited many to get a reputation for learning by looking wise and talking in cabalistic language. On the other side it has subserved the selfish interests of many others to cause the people to think that this mystery is for no purpose but to conceal fraud. Both sides are equally disposed to avoid the light which might interfere with their personal ends.

To begin at the beginning, there are several ways of collecting the premiums, falling naturally into two groups, namely; payment in advance or payment upon call after the death for which indemnity is demanded. The latter was

properly called the assessment plan, not because other plans do not also assess the losses, but because this plan brought that fact home to all concerned by assessing against money in the members' pockets instead of against funds already paid in by the members. Few of the so-called assessment companies now-a-days make use of this plan, they are no longer really assessment companies.

Whether premiums are collected before or after the losses occur, naturally has a bearing on the interest question. If no funds are carried in hand, the interest factor is perforce eliminated from the problem. In many cases, where funds are collected in advance, they are not materially in excess of current demands and no interest is earned. Often too, when the funds in hand are not inconsiderable, interest plays no part in the transaction, being no part of the scheme of the society. Companies which use interest as a factor in their computations variously credit it, some credit each policy with the average interest actually earned upon its entire share of the assets, others deduct something for the expense of management, and yet others credit only an arbitrarily fixed rate.

In this connection it is proper to remark that claims put forward by insurance companies to opportunities for investment superior to those of private persons may be dismissed as nonsense. The rate of interest earned may differ and indeed does differ in the various companies owing to the accident of location or to the policies of the management, but a life insurance company has no better opportunities for investment than any other person or corporation in the same locality. Some companies for inscrutable reasons choose to invest their assets principally in convertible securities, receiving a smaller revenue on that account. No such interest can be expected on deposits subject to check as on time deposits and the same law obtains in the security market. As there is practically no danger of a sudden and forced liquidation of insurance companies whose liabilities

mature gradually, and as there are wide fluctuations in the current prices of listed, negotiable securities which have many times caused the ruin of companies otherwise solvent, there would seem to be no good reason why the insured should forego any profit upon their invested funds in order to secure the doubtful advantage of ready convertibility. The members desire absolute security on the part of insurance investments and expect as large returns as can be had without endangering that safety. They willingly surrender all chance of speculative enhancement of values when they invest in the life insurance companies, they do not wish to run the risk of speculative decline.

About no factor in life insurance is there so wide a disagreement as about the proper apportionment of death-losses. The methods in vogue are readily classified into three divisions. One mode which was most popular with the earlier assessment companies, was to tax the death-losses equally—so much per member or per thousand of insurance without regard to age. Another method taxes death-losses by some fixed proportion according to the age at entry. Usually this gradation is taken from some mortality table, and results from a misconception of the significance of natural premium tables which are intended to cover an increasing premium, as will be hereafter explained. But a class of societies has arisen in the West, which operate upon a plan which fixes the rate of assessment in proportion to the years of one's age at entry, that is, for ages 30 and 40 in the ratio, 30 : 40. This is artificial and puerile, and it is a relief to know that its originator, once so proud of it, has recently experienced a change of heart. The successful and economical management of this first society served to conceal the defect of the plan for a long time, and to make others think that the success was the consequence of the perfection of the plan.

It is apparent that there is a greater risk at age 40 than at age 30, and that, other things being equal, there is as great a hazard in covering a life now at age 40, but admitted at

age 30, as in covering another life just admitted at age 40. Indeed, taking into account the value of fresh selection, the hazard of the former may well be considered the greater. That a man was insured at age 30, constitutes no valid argument for allowing him when at age 40, to contribute to the fund for paying losses as if yet 30. If such be permitted, he will pay less than his insurance costs and is worth, and as the operation is mutual, some one else must pay more than insurance is worth to make it good. The question of the apportionment of losses has nothing whatever to do with that of level, irregular or rising premiums.

The method of assessing losses by an advancing or sliding scale is mostly used now-a-days, even in co-operative companies, which fact is a recognition of sound principles of life underwriting. In legal reserve companies this method is fundamental and universal. In its crudest form it appears in arbitrary advances of the rates of assessment at intervals, usually of one year, but often of longer periods. Sometimes this advance is made a less objectionable bolus by guarantees, or at least assurances, of a maximum rate beyond which no advances should be made, or that no advance will be made after a certain age or duration of membership is attained.

Usually, however, in the more progressive co-operative companies, and always in regular companies, the actual death-losses are taxed against the members in proportion to the cost of insurance at current ages, according to a standard mortality table. The three tables in use in this country were deduced from the actual experience of companies, the Actuaries, from the combined experience of several British offices, the American from the experience of the Mutual of New York, and Meech's, from the experience of thirty American companies. The first is in general use throughout the country, the second in the offices of several companies, and the last in the offices of two advanced co-operative companies at least. All of these tables provide for a

gradually, but irregularly increasing mortality, converging to one hundred per cent at age 95 or 100. The percentages of annual cost at the various ages form the natural premium table, and that is the basis of the assessment of losses among the members.

In order to illustrate these radically different modes of taxing losses, suppose a loss of $3 to be made good by three men now aged 20, 30 and 40. The first method described, that of equal assessment without regard to age, gives the following result:

$$\$3 / 3 = \$1 \text{ each.}$$

Assuming that all of these have just been admitted and are therefore assessed at their present ages, the method next described would give this result:

The sum of all the ages is $20+30+40 = 90$.

A $20/90 \times \$3 =$	$\$60/90 =$	$\$$	$.66\frac{2}{3}$
B $30/90 \times 3 =$	$90/90 =$		1
C $40/90 \times 3 =$	$120/90 =$		$1.33\frac{1}{3}$
Total, ...			$3.00

Assuming, on the contrary, that all were admitted at age 20, this method would give a result equivalent to that of the first, as each would be assessed equally.

Assuming that A had just entered, B entered five years before, and C ten years before, the computation would be as follows:

A,	age at entry	20
B,	"	25
C,	"	30
Sum, . .		75

Therefore,

A $20/75 \times \$3 =$	$\$60/75 =$	$\$$	.80
B $25/75 \times 3 =$	$75/75 =$		1
C $30/75 \times 3 =$	$90/75 =$		1.20
Total, . . .			$3.00

Any other method of fixed assessment according to age at entry would work in a similar manner.

The third and last method described takes into account the actual ratios, so far as science has ascertained them, which exist between the mortality at one age and at another. The age at entry has no bearing upon this method of calculation. The various tables mentioned differ but little. In what follows, the American is employed. The amount to be taxed against each one is arrived at as follows:

A,	tabular risk per thousand at present age,	7.81
B,	" " " "	8.42
C,	" " " "	9.79
	Sum, ...	26.02

Therefore,

A	7.81 / 26.02 × $3	= $23.43 / 26.02	=	$ .90
B	8.42 / 26.02 × 3	= 25.26 / 26.02	=	.97
C	9.79 / 26.02 × 3	= 29.37 / 26.02	=	1.13
	Total, ...			$3.00

This division is approximately just and fair. It will be observed that in all this no account is taken as to whether the losses have exceeded the expected losses according to the table or not; the table is used merely as a gauge for the proper distribution of the actual losses among the contributors.

There are two methods of apportioning the outgo for maturities other than by death. The system in use in co-operative bond societies contemplates the taking from the accumulated funds of all the amount necessary to cover maturing obligations without regard to whether the beneficiary has contributed in principal and interest enough to pay his endowment or not. In theory some will reap a profit and others get less than they pay. In practice the lapse of time brings certain ruin. In all regular companies the amount of the endowment is accumulated from the premiums of the holder.

Three modes of assessing expenses have been in vogue. One method makes the expense-cost directly proportional to the mortality-cost. This is now uncommon except as a partial provision in societies which try to cover up the fact that they are spending more than the amount intended for that purpose. One great regular company also uses this method in part, and their actuary skillfully defends it on scientific principles. Another method, more common among the co-operative societies but in use by some regular companies, is to charge a level amount per thousand of insurance for expense purposes. This is evidently fair but in practice, owing to the well-nigh universal custom of remunerating agents by a percentage commission, it works invidiously so as to confine the business of such a company to risks at certain ages only when the commission offered chances to exceed the percentage commission allowed by other companies at the same age. This plan ought, however, to be thoroughly tested before abandonment as it is obviously the just plan.

Among regular companies and in many co-operative societies a different system prevails, the expenses being taxed according to the amount of the premium or more accurately according to the excess of the actual premium over the net premium required by the company's calculations to cover losses only. This excess is known as the loading and is considered to constitute the fund available for expenses. This mode of distributing the expense cost is only defensible on the ground of expediency and because of the exigencies of the business. It bears heavily upon those who have delayed taking insurance until old age; and it also renders endowment insurance with its large premiums and consequently large contributions to expenses less profitable than is desirable.

The words "net premium," employed in the foregoing, call for an explanation which carries us into the distinctions between co-operative and legal reserve insurance. Common sense, which has in most States expressed itself in legislation, demands that a society which undertakes to guarantee to pay

a definite amount upon the event of death and at a guaranteed cost to the insured, should so fix that price and so conduct its business as to make it probable that it can fulfill its engagements. In life insurance this means that a company must not count upon too low mortality nor too high interest. That is all that the expression, legal reserve, means. It is not considered safe in most States for a society to count on a mortuary experience lower than that of the Actuaries' or American tables or upon an interest exceeding four or four and one-half per cent. Such regulations seem reasonable when it is borne in mind that many a company has had a worse mortality experience and that no good trust company would consent to guarantee even four per cent for a man's lifetime. Similar regulations are enforced in other countries by the companies themselves in the absence of law. The only hardship is the sometimes forcing of a receivership when a company is really solvent. This could be avoided by enforcing a high standing as a prerequisite to receiving new business and a lower standard as a condition of continuance of business at all. In calculating the amount of premium which a company should charge, a net premium is reached which does not provide for extraordinary contingencies nor for any expenditure beyond maturities by death or expiry. The actual premium is of course larger in most cases and as has already been explained, the excess is called the loading.

It must be evident that previous to the expiration of the time for which it has been paid to carry the insurance, a company should have on hand sufficient of the premium to cover the probable mortality calls until the next premium is due and payable. It must also be evident that if a premium higher than is required to cover the risk of the one year has been collected on an agreement to furnish insurance at a level price, the company should have on hand more than enough to cover the losses for the remainder of the current year. This is true both because a sum in excess of current

requirements has been collected and should be accounted for and also because at some time in the history of the policy the premium will be inadequate to cover current requirements unless supplemented by a fund accumulated from previous premiums. This is evident since it is the very essence of an average, level or equated premium that it should be higher than the natural premium for a time and then lower.

Reserve valuations which are such an enigma to many, are merely calculations of the amount companies should thus have on hand at a given date. Such calculations are as necessary in term or natural premium companies as in level premium. Every company should have on hand at all times sufficient to cover the policies' share of probable losses by some standard table up to the time the next premium falls due. For instance if a policy has been paid for a year, and six months have elapsed, the company should have at least enough on hand to cover the mortality demands for six months. If the policy is a level premium policy there should be an additional amount on hand to make good the difference between the contract premium and the premium which would be charged at the present age. For a company cannot carry insurance for a man now aged 40 at a less cost just because he insured at 30; yet it is under contract to furnish it at the rate at age 30. This it can very well do if it has in hand from previous premiums a fund sufficient to cover the difference between the two premiums and not otherwise. Fortunately this amount should be in hand unless interest has been lower than was expected or mortality higher, in either of which cases the premium is too low and the reserve should therefore be yet higher in order to make good the inadequacy of the premium.

If the premium paid with its interest exceeds the required reserve, there is a surplus. Formerly it was the custom to return this in whole or in part every year; but now the more popular plan is to permit the accumulation to continue undisturbed for a long term.

In this way the fifth element of a gain to individual members because of discontinuance comes in. This apparent gain results from the diminution of the number of persons remaining to divide the sum total. Recent statistics, however, indicate that this gain is chimerical and more than counterbalanced by the increased expense of obtaining business. Men need more soliciting to be induced to take anything which ties up money under pain of partial or complete forfeiture, than to take something which will in any case be advantageous. That portion of the insuring public who need the least soliciting, those who desire insurance for its own sake, now-a-days insure in the cheaper societies and fraternities practically without solicitation. This is undoubtedly principally the consequence of the harsh surrender conditions of the regular companies, which could make as favorable a showing as to cost if the insured were at all times permitted to withdraw the unexpended portion of his money. This fact, coupled with their unwillingness to furnish pure insurance on cheap, temporary plans, was what caused regular companies to be met by the competition of co-operative institutions which had their birth in the dissatisfaction of the people with the existing companies.

In the light of recent statistics it would seem dangerous to base rates upon a discount of probable gains from lapses. Yet that is what has been done by a leading co-operative company, and while not admitted, is really done by several others, including some regular companies. All of them, however, leave themselves the loop-hole of a privilege to call for more than the stipulated premium if necessary. This is perhaps well for the safety of the company, but is likely to be very onerous on those who when their accumulated funds give out in old age, are compelled to face the large natural premiums required at advanced ages.

Much more might be said about these and cognate matters, but enough has been said to give a tolerably clear idea of the nature of the various contracts. There is, however, one

other feature not connected with the plans of insurance, which widely differentiates the companies, namely; the form of government. Nothing need be said concerning the stock companies, their system is sufficiently understood. The mutual and co-operative companies are for the most part governed by a proxy system which results in placing autocratic power in the hands of one man or a few men. This has been provocative of nepotism, extravagance and other vices which attend absolutism everywhere. In a few companies and societies the proxy system is modified by restrictions which make it more difficult for one man to perpetuate his sway. In a very few companies and societies proxy voting is not permitted at all, and in at least one company no officer, trustee, agent or employe is permitted to vote any proxies. But in none of these is there any earnest effort made to discover the will of the membership.

The only thoroughly American and democratic method of government is that in use by the fraternities, and consists in a representative system intended to draw out an expression of the wishes of the entire membership. It has resulted well, for although no inconsiderable amount is expended by the societies for social purposes, they have proved more economical than have companies managed by the other system. They have also been more popular, and the cost of obtaining new insurances is therefore much less than elsewhere. If this economy of management could be combined with the more reliable and correct plans in use by the regular companies, there would seem to be every reason to expect unequalled results from this system. A yet more direct and democratic system obtains in one of the mutual societies which submits all important questions to a direct vote of the members by mail. In any case it may well be said that these organizations most nearly approximate what accords with the genius of our age and people.

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